

In the Claims

The following listing of the claims replaces all previous listings.

1. (Original) A site for a subcutaneous infusion device, comprising:
a base positionable relative to skin of a patient;
a cannula extending from the base and configured to be introduced into a subcutaneous layer of skin of the patient using a needle; and
a single, unitary diaphragm coupled to the base, the single diaphragm including a closed end, an open end, and a sidewall, and the single diaphragm defining an internal reservoir in fluid communication with the cannula through the open end;
wherein the single diaphragm is pierced by the needle through the upper end to introduce the cannula into the subcutaneous layer of skin of the patient; and
wherein the single diaphragm is pierceable through the sidewall to access the internal reservoir to deliver a substance to the patient through the cannula.
2. (Original) The site of claim 1, wherein the base is cylindrical and further includes a top side and a bottom side and defines a central aperture located at a central axis of the base and extending through the base, and the bottom side including an adhesive portion.
3. (Original) The site of claim 2, wherein the base further includes a member including first and second ends, the member being positioned about the central aperture of the base and coupled to the base at the first end, an interior wall of the member defining a cavity, and the second end of the member being open.
4. (Original) The site of claim 3, wherein the single diaphragm is positioned in the cavity of the member and the sidewall of the diaphragm frictionally engages the interior wall of the member to retain the diaphragm in the cavity.
5. (Original) The site of claim 1, wherein the cannula includes first and second ends and defines a bore extending from the first end to the second end, the first end of the cannula including a tapered top side opening into the reservoir of the diaphragm.

6. (Original) The site of claim 1, wherein cannula extends generally perpendicular with respect to the base.

7. (Original) The site of claim 1, further comprising the needle extending through the diaphragm and the cannula of the site.

8. (Original) The site of claim 1, wherein inner surfaces of the diaphragm that define the internal reservoir are compressed against a top portion of the cannula to provide fluid communication between the diaphragm and the cannula.

9. (Original) A site for a subcutaneous infusion device, comprising:

a base including a top side and a bottom side and defining a central aperture located at a central axis of the base and extending through the base, the base further defining slots on the top side positioned radially with respect to the central axis at regular intervals, and the bottom side including an adhesive portion;

a member including first and second ends, the member being positioned about the central aperture of the base and coupled to the base at the first end, an interior wall of the member defining a cylindrical cavity, and an exterior periphery of the member defining a groove extending about the exterior periphery, the member defining eight apertures extending from the interior wall to the groove in the exterior periphery of the member, and the second end of the member being open;

a cannula including first and second ends and defining a bore extending from the first end to the second end, the first end of the cannula including a flanged portion having a bottom side configured to engage a bottom surface in the cavity of the member, and a tapered top side opening into the cavity, and the cannula extending through the central aperture of the base generally perpendicular to the base such that the second end of the cannula is positioned outside the cavity; and

a diaphragm including an open bottom and a closed top, the diaphragm being positioned in the cavity of the member and an outer periphery of the diaphragm frictionally engaging the interior wall of the member to retain the diaphragm in the cavity, and the diaphragm defining a reservoir in fluid communication with the cannula through the open bottom of the diaphragm;

wherein the cannula is positionable in a subcutaneous layer of skin of a patient, and a substance is deliverable from the reservoir of the diaphragm, through the bore of the cannula, and into the subcutaneous layer of skin of the patient.

10. (Original) The site of claim 9, further comprising a retainer coupled to the second end of the member to further hold the diaphragm within the cavity of the member.

11. (Original) The site of claim 9, wherein the diaphragm is pierced by a needle through the upper end to introduce the cannula into the subcutaneous layer of skin of the patient, and wherein the diaphragm is pierced through the outer periphery to access the reservoir to deliver a substance to the patient through the cannula.

12. (Original) The site of claim 9, wherein inner surfaces of diaphragm that define internal reservoir are compressed against a top portion of the cannula to provide fluid communication between the diaphragm and the cannula.

13. (Withdrawn) A set for a subcutaneous infusion device, comprising:
a first member including a needle; and
a second member defining a central aperture configured to accept a site;
wherein the first member can be oriented relative to the second member; and
wherein the first member is slideable relative to the second member from an unlocked position to a locked position, and wherein in the locked position the needle extends into the central aperture to engage the site.

14. (Withdrawn) The set of claim 13, wherein the first member further includes first and second inner arms and first and second outer arms all extending generally parallel to one another, the first and second inner arms including barbs positioned at respective ends, the first and second outer arms including outer surfaces and barbs positioned at respective ends, and the needle being positioned centrally between and generally parallel with respect to the first and second inner arms;

15. (Withdrawn) The set of claim 14, wherein the second member further includes a base portion, a receiving portion coupled to the base portion, the receiving portion defining first and second stops and first and second opposing notches.

16. (Withdrawn) The set of claim 15, wherein the inner and outer arms of the first member are insertable into the receiving portion of the second member as the first member is slid toward the second member such that the barbs of the first and second outer arms engage the first and second opposing notches of the receiving portion of the second member to lock the first member to the second member.

17. (Withdrawn) The set of claim 16, wherein, with the first member and the second member in the locked position, the first member and the second member can be moved to the unlocked position by deflecting outer surfaces of the first and second outer arms of the first member to disengage the barbs from the notches so that the first member can be partially slid out of the receiving structure of the second member until the barbs of the first and second inner arms contact the first and second stops of the second member to retain the first member and the second member in the unlocked position.

18. (Withdrawn) The set of claim 13, wherein the first and second members are biased into the unlocked position.

19. (Withdrawn) The set of claim 13, further comprising a fluid passage including a tube in fluid communication with the needle.

20. (Withdrawn) A set for a subcutaneous infusion device, comprising:

a first member including first and second inner arms and first and second outer arms all extending generally parallel to one another, the first and second inner arms including barbs positioned at respective ends, the first and second outer arms including outer surfaces and barbs positioned at respective ends, and the first member including a hollow needle positioned centrally between and generally parallel to the first and second inner arms; and

a second member engageable with the first member and including a base portion, a receiving portion coupled to the base portion, and an aperture defined through the base portion and the receiving portion, the receiving portion defining first and second stops and first and second opposing notches;

wherein the inner and outer arms of the first member are insertable into the receiving portion of the second member as the first member is slid toward the second member such that the barbs of the first and second outer arms engage the first and second opposing notches of the receiving portion of the second member to lock the first member to the second member when the first member and the second member are in a fully-engaged position; and

wherein, with the first member and the second member in the fully-engaged position, the first member and the second member can be unlocked from one another by deflecting outer surfaces of the first and second outer arms of the first member to disengage the barbs from the notches so that the first member can be partially slid out of the receiving structure of the second member until the barbs of the first and second inner arms contact the first and second stops of the receiving portion to retain the first member and the second member in a fully-disengaged position.

21. (Withdrawn) An infusion device for delivery of a substance to a subcutaneous layer of skin of a patient, comprising:

a site defining a central aperture and a cavity, a diaphragm positioned in the cavity and defining a reservoir, and a cannula extending through the central aperture and having a first end that is fluidly coupled to the reservoir of the diaphragm; and

a set including first and second members, the first member including a hollow needle fluidly coupled to an access port, and the second member defining an opening extending through the second member, and the first and second members being slideable relative to one another between an unlocked position and a locked position;

wherein the site is positionable on skin of a patient so that the cannula of the site is introduced into a subcutaneous layer of skin of the patient; and

wherein the set, in the unlocked position, is positionable on the site so that the member is received in the opening of the second member of the set, and the first member is slideable relative to the second member to move from the unlocked to the locked position to couple the set

to the site, and as the first member is slid towards the second member, the needle of the first member is introduceable into the reservoir of the diaphragm.

22. (Withdrawn) The infusion device of claim 21, wherein a base of the site defines a plurality of positional slots extending radially around the central aperture, wherein the set includes a plurality of projections extending from a bottom surface of the second member, and wherein the plurality of projections of the second member of the set engage at least some of the plurality of positional slots of the base as the set is positioned on the site in a given rotational orientation.

23. (Withdrawn) The infusion device of claim 21, wherein the first member of the set includes a plurality of arms configured to be received in the second member as the first member is slid relative to the second member, wherein the arms are positioned about the opening of the second member and the needle is positioned between the arms.

24. (Withdrawn) The infusion device of claim 21, wherein a base of the site defines a groove in an outer periphery, and the first member includes two arms extending tangentially about opposing sides of the opening of the second member, and wherein the two arms include surfaces that are received in the groove of the site as the first member is slid toward the second member to the locked position.

25. (Withdrawn) An infusion device, comprising:

a site including a base, a cannula extending from the base, and a seal in fluid communication with the cannula for delivering a substance through the seal and into the cannula; and

a set including a first member including a needle, and a second member defining an aperture configured to accept the site, wherein the first member is slideable relative to the second member from an unlocked to a locked position, and wherein in the locked position the needle extends into the aperture and through a portion of the seal of the site to deliver the substance to the site.

26. (Withdrawn) The device of claim 25, wherein the set is positionable at multiple orientations relative to the site.

27. (Withdrawn) The device of claim 26, wherein the multiple orientations are discrete orientations.

28.-33. (Canceled)